

Bellwork: 4/16/13

Find the x-intercept, y-intercept, vertical asymptote, and horizontal asymptote for the function:

1) $y = \frac{x+1}{x^2-x-6}$

$(x+2)(x-3)$
 $x+2=0 \quad x-3=0$
 $x=-2 \quad x=3$

$y=0 \quad (-1, 0)$
x-int:

$x=0 \quad (0, -\frac{1}{6})$
y-int:

den=0 $x=-2, 3$
VA:

rules
HA: $y=0$

2) $y = \frac{-2x+6}{x-5}$

$-2x+6=0$
 $-2x=-6$
 $x=3$

x-int: $(3, 0)$

y-int: $(0, -\frac{6}{5})$

VA: $x=5$

HA: $y=-2$

$y = \frac{2}{4x^2-1}$

num=0
X int: none

$x=0$
y int: $(0, -2)$

den=0
VA: $x=\frac{1}{2}, -\frac{1}{2}$

rules
HA: $y=0$

$2=0$
 $\frac{2}{4(0)^2-1} = -2$

$4x^2-1=0$

$(2x-1)(2x+1)=0$

$2x=1 \quad 2x=-1$
 $x=\frac{1}{2} \quad x=-\frac{1}{2}$

Section 8.3: Graphing Rational Functions

1) $y = \frac{2}{x+1}$ $\frac{2}{1+1} = \frac{2}{2} = 1$

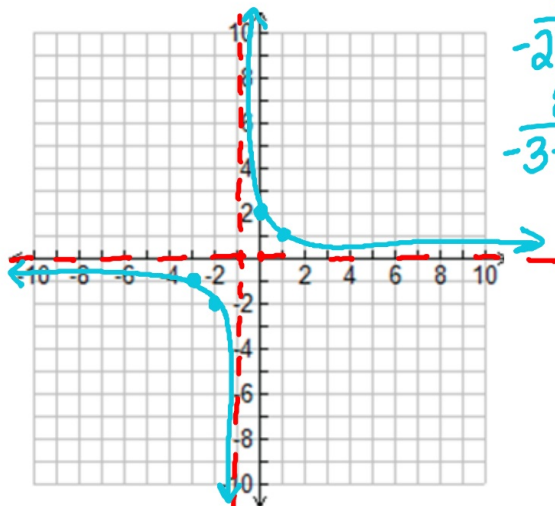
$a=0$ $\frac{2}{0+1} = \frac{2}{1} = 2$

$x+1=0$
 $x=-1$ bottom

num=0
x-int: none

x=0
y-int: (0, 2)

den=0
VA: $x=-1$
rules
HA: $y=0$
dotted lines first!



$\frac{2}{-2+1} = -\frac{2}{1} = -2$
 $\frac{2}{-3+1} = -\frac{2}{2} = -1$

then use x/y chart to find additional points

x	y	x	y
1	1	-2	-2
		-3	-1

2) $y = \frac{|x+1|}{1x}$

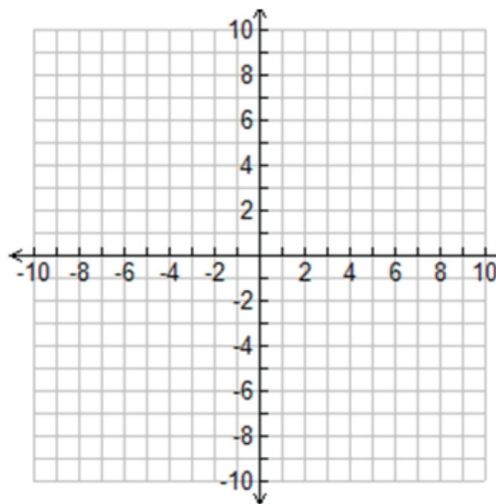
$x+1=0$ $\frac{0+1}{0} = \frac{1}{0}$

num=0
x-int: (-1, 0)

x=0
y-int: none

den=0
VA: $x=0$

rules
HA: $y=1$



x/y chart

Homework: 4/16/13
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